

The opinion in support of the decision being entered today
is not binding precedent of the board

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RONALD E. DeLUGA

Appeal No. 2007-0507
Application 10/737,051
Technology Center 2800

Decided: July 18, 2007

Before JOHN C. MARTIN, JOSEPH R. RUGGIERO, and JAY P. LUCAS,
Administrative Patent Judges.

MARTIN, *Administrative Patent Judge.*

DECISION ON APPEAL

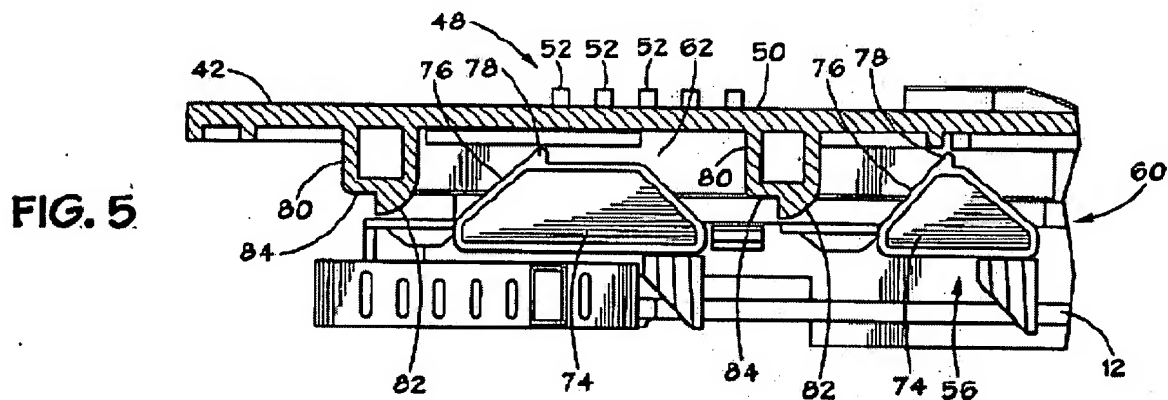
This is an appeal from the Examiner's rejections of claims 1-42, all of the
pending claims, under 35 U.S.C. §§ 102(b) and 103(a).

We have jurisdiction under 35 U.S.C. §§ 6(b) and 134(a). We affirm-in-part.

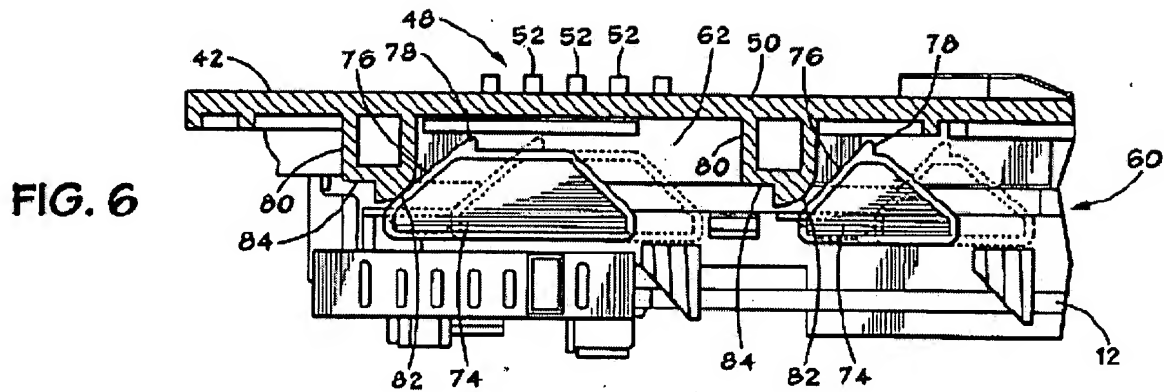
APPELLANT'S INVENTION

Appellant's invention is a latch assembly that facilitates the insertion and removal of a component, such a battery, from a receptacle in an electronic device, such as a laptop computer.

The structure and operation of an embodiment of the invention are depicted in Figures 5-7, reproduced below.



As shown in Figure 5, the battery 42 has two downwardly extending bosses 80 each having a curved engagement surface 82 leading to a retention notch 84 (Specification 10:11-17). These bosses are engageable by respective a lift tabs 74 on a spring-biased, movable carriage 62 that is connected to a manually movable slide member 50 (shown better in Fig. 3). Moving the carriage from the position shown in Figure 5 to the position shown in Figure 6 brings the sloped surfaces 76 of lift tabs 74 into contact with engagement surfaces 82 of bosses 80.



Continued movement of the carriage results in lifting of the bosses and thus the battery. As shown in Figure 7, at the end of the lifting operation the retention features 78 (Fig. 6) of the lift tabs engage retention notches 84 of the bosses, thereby preventing the biasing spring from returning the carriage to its rest position after the user releases sliding member 50 (*id.* at 10:21-11:12).

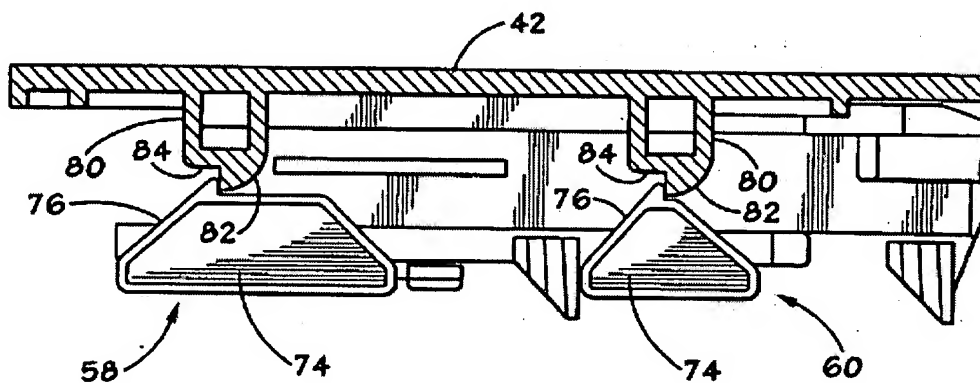


FIG. 7

THE CLAIMS

The independent claims are claims 1, 7, 14, 20, 22, and 29. Claim 7 reads:

7. A component mount for a computer, comprising:

a component latch movable between a latched configuration and an unlatched configuration;

a lifter having a sloped structure leading to an inwardly angled structure; and

a boss movable along the sloped structure to a lifted position at the inwardly angled structure, whereat a mating angled structure of the boss is retainable against the inwardly angled structure.

THE REFERENCE AND REJECTIONS

The sole reference relied on by the Examiner is:

Ohgami	U.S. 5,764,477	June 9, 1998
--------	----------------	--------------

Claims 7-11, 14-17, 22-27, 36, 37, and 40 stand rejected under 35 U.S.C. § 102(b) for anticipation by Ohgami.

The remaining claims, i.e., claims 1-6, 12, 13, 18-21, 28-35, 38, 39, 41, and 42, stand rejected under § 103(a) for obviousness over Ohgami.

THE ISSUES¹

1. Does Ohgami disclose “angled” retention structures, as required by independent claims 7, 14, and 22?
2. If Issue 1 is answered in the affirmative, do Ohgami’s angle retention structures include the additional features recited in dependent claims 10 and 17?
3. If Issue 1 is answered in the affirmative, would it have been obvious to modify Ohgami’s latch to employ a plurality of bosses and mating retention structures, as required by independent claims 1, 20, and 29?
4. If Issue 3 is answered in the affirmative, do Ohgami’s retention structures include the additional features recited in dependent claims 2, 4, 39, and 41?

PRINCIPLES OF LAW

Application claims are interpreted as broadly as is reasonable and consistent with the specification, “taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in

¹ The issues as stated herein reflect the Appellant’s arguments. *See Gechter v. Davidson*, 116 F.3d 1454, 1460, 43 USPQ2d 1030, 1035 (Fed. Cir. 1997) (“[W]e expect that the Board’s anticipation analysis be conducted on a limitation by limitation basis, with specific fact findings for each *contested* limitation and satisfactory explanations for such findings.”) (emphasis added). *Cf. In re Rouffet*, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1455 (Fed. Cir. 1998) (“On appeal to the Board, an applicant can overcome a rejection [for obviousness] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”).

the applicant's specification.” *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997).

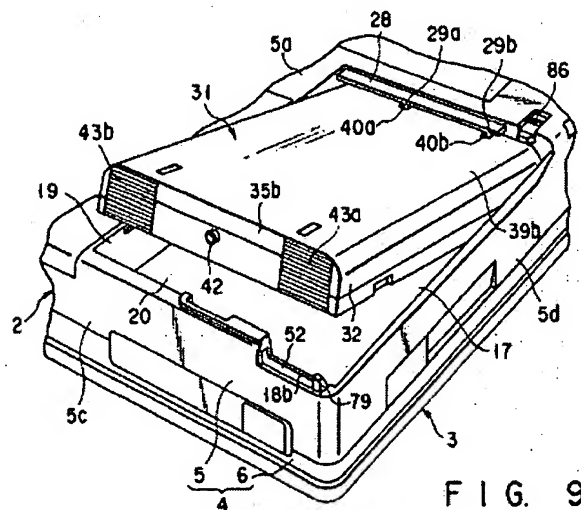
Anticipation is a question of fact. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). “To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently.” *Id.*

“[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). A rejection under 35 U.S.C. § 103(a) must be based on the following factual determinations: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) objective indicia of non-obviousness. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360, 80 USPQ2d 1641, 1645 (Fed. Cir. 2006) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966)).

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Leapfrog Enter., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161, 82 USPQ2d 1687, 1691 (Fed. Cir. 2007) (quoting *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-41, 82 USPQ2d 1385, 1395 (2007)). “One of the ways in which a patent's subject matter can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims.” *KSR*, 127 S. Ct. at 1742, 82 USPQ2d at 1397.

ANALYSIS OF THE § 102(b) REJECTION

Ohgami discloses a latch mechanism for a computer battery pack that lifts the battery when the latch is operated to release the battery. The lifting mechanism is designed to engage “a pillar-shape (cylindrical) convex portion 42” extending from the end surface 35b of the battery case 32 (col. 8, l. 66 to col. 9, l. 3), as shown in Figure 9, reproduced below. As noted by Appellant (Br. 8²), “convex” is defined in *The Random House College Dictionary* 294 (rev. ed. 1988) to mean: “having a surface that is curved or rounded out.” This convex portion is hereinafter referred to as “battery pillar 42.”



As shown in Figure 10A (reproduced below), Ohgami employs a spring-biased slider 55 that engages battery pillar 42 in order to latch or unlatch the battery

² References to the Brief are to the Supplemental Appeal Brief, filed August 2, 2005.

and to raise one end of the battery as part of the unlatching operation. Slider 55 is moved by means of a “finger-hooking portion” 79 (col. 10, ll. 36-44) and includes a guide wall portion 59. Guide wall portion 59 has a flat surface 60 that faces the end surface 35b of the battery case when a battery is located in receptacle 17 (col. 9, ll. 33-37). Guide wall portion 59 also provides a cam surface 65 having (1) a cam portion 64 and (2) an extension 66 that includes a concave (i.e., cylindrical) surface area or cavity 67 (col. 9, ll. 51-61).

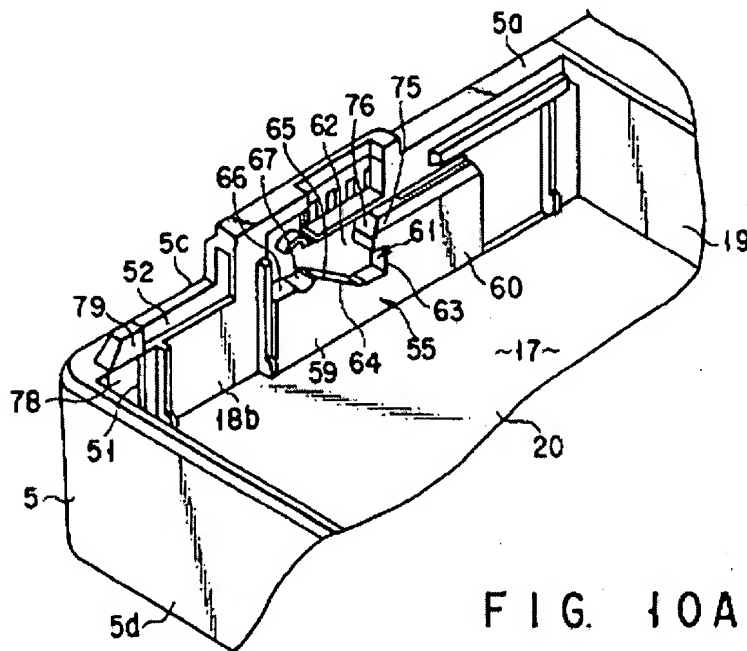


FIG. 10A

Figure 11A shows the slider in the lock position into which it is biased by a spring 69 (shown in Fig. 17) (col. 9, l. 66 to col. 10, l. 18). When the slider is in the lock position, battery pillar 42 is held in a groove-shaped lock portion 61 of the slider.

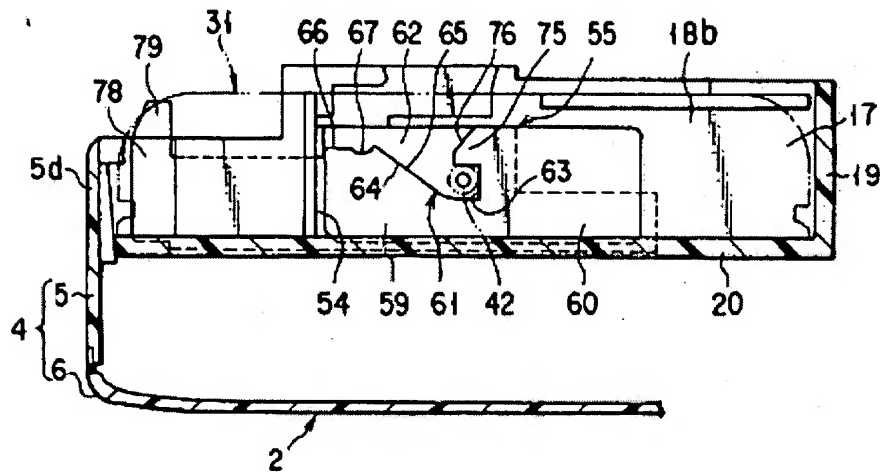


FIG. 11A

Moving the slider to the right toward the lock release position brings cam portion 64 of cam surface 65 into lifting engagement with battery pillar 42. Continued movement of the slider in the same direction brings cavity 67 in extension 66 of cam surface 65 into mating engagement with battery pillar 42, resulting in the battery pack being supported in the raised position shown in Figure 11B. Cavity 67 cooperates with battery pillar 42 to hold the battery pack in this position after

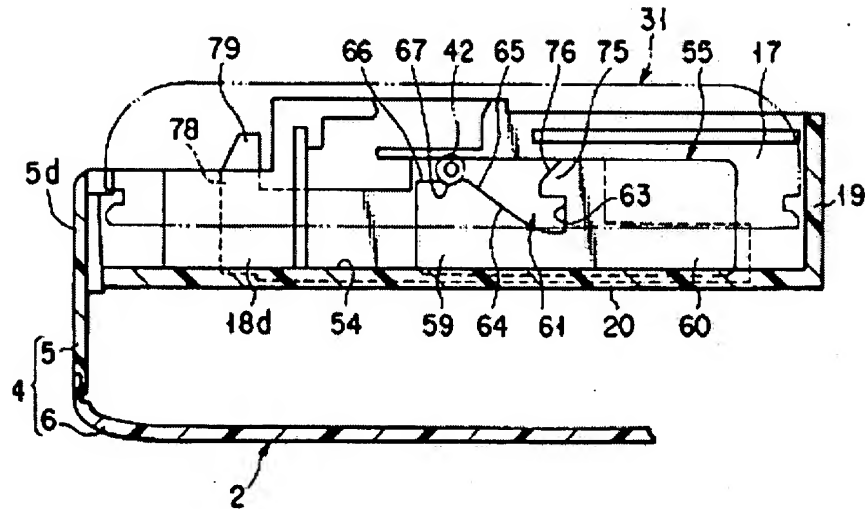


FIG. 11B

thumb pressure is released from finger-hooking portion 79 and until the battery is removed. See col. 11, ll. 22-27 (“As shown in FIG. 11B, the convex portion 42 is guided to the extension 66 of the cam surface 65 through the insertion port 62 [Fig. 11A] so as to be hooked on the cavity 67 of the extension 66. As a result, the slider 55 is temporarily held by the lock release position.”). See also col. 11, ll. 48-53 (“If the end portion of the battery pack 31 is pushed out of the opening portion 21, the convex portion 42 is detached from the cavity 67 of the slider 55. Due to this, the maintenance of the slider 55 is released, and the slider 55 is automatically returned to the lock position from the lock releasing position.”).

The term “boss,” which is not defined in Appellant’s Specification, is defined in *Webster’s II New College Dictionary* 129 (2001) (copy enclosed) as “1. A circular protuberance. 2. A raised area used as an ornamentation. 3. . . .” However, because Appellant’s Specification and drawings fail to indicate that

bosses 80 are circular in cross-section and Appellant does not argue that “boss” implies a circular protuberance, we are construing “boss” as used in the claims to mean a raised area.

The Specification also fails to define the phrase “angled structure,” which appears in claim 7. We agree with Appellant that “angled” means “having an angle or angles.” We also accept Appellant’s assertion that “angle” is defined in *The Random House College Dictionary* 51-52 (rev. ed. 1988) to mean “the space between two or more lines or three or more planes diverging from a common point” (Br. 8). Furthermore, although not addressed by Appellant or the Examiner, we find that “structure” is broadly defined to mean “5. Something constructed, esp. a building or part.” *Webster’s II New College Dictionary* 1094 (2001) (copy enclosed). We therefore hold that the broadest reasonable interpretation of “angled structure” in claim 7 is a part having a feature (e.g., a surface or edge) that forms an angle with another feature on that part.

Comparing claim 7 to Ohgami, Appellant does not deny that the Examiner was correct to read the recited “component latch” on slider 55; the “lifter” on guide wall portion 59 of slider 55; the “sloped surface” of the lifter on cam surface 64; and the “boss” on battery pillar 42 (Answer 3). Thus, the sole issue regarding claim 7 is whether Ohgami discloses the recited “inwardly angled structure” of the lifter and the “mating angled structure” of the boss. In addressing claim 7 and dependent claim 10, the Examiner correctly found that the recited “inwardly angled structure” of the lifter reads on the combination of surface extension 66 (which includes cylindrical cavity 67) and surface 60 (Final Action 10; Answer 11-14).

Because surface extension 66 (including cavity 67) is perpendicular to surface 60, which faces the inside of battery receptacle 17, we find that surface extension 66 (including cavity 67) and surface 66 form an “inwardly angled structure.”

Although cavity 67, which provides the retention function, is a cylindrical surface, it properly can be characterized as perpendicular to surface 60 because its axis is perpendicular to that surface. Appellant’s arguments regarding this limitation are unpersuasive because they fail to take into account that the Examiner is relying on the ninety-degree angle formed by surface extension 66 (including cavity 67) and surface 60. Appellant instead discusses curved cavity surface 67 without addressing its angular relationship with surface 60 (Br. 8-9) and discusses surface extension 66³ without addressing its relationship to surface 60 (Reply Br. 2).

Turning now to the recited “mating angled structure” of the boss, the Examiner found that this limitation reads on Ohgami’s cylindrical battery pillar 42 because its cylindrical surface is perpendicular to end surface 35b of battery case 32 (Final Action 10; Answer 10-11). We do not agree that the end surface 35b of the battery case can be considered to be part of the recited boss. However, the flat, circular end surface of the battery pillar is perpendicular to the axis of its cylindrical surface, with the result that those two surfaces define an “angled structure” of the boss. Furthermore, because the radius of curvature of the cylindrical surface of the battery pillar is the same as the radius of curvature of cavity 67 in guide wall

³ The Reply Brief at page 2 is partially correct in characterizing “portion 66” as flat. Surface extension 66 of cam surface 65 includes a flat surface region (unnumbered) and the cylindrical surface region 67 (Ohgami, col. 9, ll. 56-61).

portion 59 (i.e., the recited lifter), the angled structure of the battery pillar properly can be characterized as “mating” with the angled structure of the lifter. The claim does not require that *both* surfaces that form the “mating angled structure” of the boss have a mating relationship with *both* surfaces that form the “angled structure” of the lifter.

Finally, because the cylindrical cavity 67 retains battery pillar 42 in the raised position shown in Figure 11B after manual pressure is released from finger-hooking portion 79 (col. 11, ll. 22-27; col. 11, ll. 48-53), Ohgami satisfies the requirement of claim 7 that “the mating angled structure of the boss is retainable against the inwardly angled structure [of the lifter].”

For the above reasons, we are affirming the § 102(b) rejection with respect to claim 7. The rejection is also affirmed with respect to independent claims 14 and 22, as to which Appellant simply repeats the arguments made with respect to claim 7.

Of the dependent claims rejected for anticipation by Ohgami, Appellant separately argued only claims 10 and 17 in the Brief (Br. 9-12), which read:

10. The component mount of claim 7, wherein the inwardly angled structure and the mating angled structure comprise substantially flat abutment surfaces that are substantially angled relative to a direction of movement between the inwardly angled structure and the mating angled structure.

17. The removable computer component of claim 14, wherein the angled retention structure and the mating angled structure comprise substantially parallel abutment surfaces.

We will begin our analysis with claim 17. This claim depends on independent claim 14, which is similar to claim 7 except for specifying that the lifter has an “angled retention structure” instead of an “inwardly angled structure.” As with claim 7, the Examiner reads the “mating angled structure” of the boss on end wall 35b of the battery and surface 60 of slider 55 (Answer 15). As explained above, end wall 35b is not part of the boss. However, as also explained above, the flat circular end surface is part of the boss and together with its cylindrical surface forms the recited “mating angled structure.” The “substantially parallel abutment surfaces” of claim 17 read on the end surface of the battery pillar 42, which is part of the “mating angled structure” of the boss, and flat surface 60 of slider 55, which surface is part of the “angled retention structure” of the lifter. These surfaces can accurately be characterized as abutment surfaces because they are physically capable of abutting other surfaces, albeit not each other. This is sufficient to satisfy claim 17, which does not require that the “abutment surfaces” be capable of abutting each other.

Claim 17 also reads on the cylindrical surfaces of battery pillar 42 and cavity 67, which are substantially parallel when they are abutting or almost abutting. The term “parallel” is not limited to flat surfaces, as argued by Appellant (Br. 11-12). *See Webster’s II New College Dictionary* 796 (copy enclosed), which gives as definition 1.c. of “parallel”: “Designating curves or surfaces everywhere equidistant.” Also, these cylindrical surfaces abut each other.

The rejection is therefore affirmed with respect to claim 17.

Claim 10, which depends on claim 7, specifies that the angled structures of the lifter and the boss “comprise substantially flat abutment surfaces that are substantially angled relative to a direction of movement between the inwardly angled structure [of the lifter] and the mating angled structure [of the boss].” The Examiner, in reading the recited abutment surfaces on surface 60 of slider 55 and surface extension 66 (presumably the flat portion of that surface extension (Answer 14), fails to explain how these flat surfaces can be considered to be substantially angled with respect to the direction of movement between the inwardly angled structure of the lifter and the mating angled structure of the boss. Both of those flat surfaces are in fact parallel to that direction of movement. The result is the same if the recited abutment surfaces are read on surface 60 of slider 55 and the circular end surface of battery pillar 42.

We are therefore reversing the § 102(b) rejection of claim 10.

The § 102(b) rejection is affirmed with respect to unargued dependent claims 8, 9, 11, 15, 16, 23-27, 36, 37, and 40. *In re Young*, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991); 37 C.F.R. § 41.37(c)(1)(vii)(2004).

In summary, the § 102(b) rejection is affirmed with respect to claims 7-9, 11, 14-17, 22-27, 36, 37, and 40 and reversed with respect to claim 10.

ANALYSIS OF THE § 103(a) REJECTION

The independent claims rejected under § 103(a) are claims 1, 20, and 29, which recite plural bosses. Claim 1 reads:

1. A component mount for a computer, comprising:
a component latch movable between a latched configuration and an unlatched configuration;
a plurality of bosses; and
a lifter engageable with the plurality of bosses to move a component to a lifted position in the unlatched configuration, wherein the plurality of bosses comprise a retention structure retainable against a mating retention structure of the lifter to retain the component in the lifted position.

The Examiner held that

[i]t would have been obvious . . . to modify the device of Ohgami with more than one boss and associated features of the lifter for preventing tilting of the component when the component [is] being mounted, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. See MPEP § 2144.04 VI, B.

(Final Action 7.) Appellant, citing *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995) (holding that “reliance on per se rules of obviousness is legally incorrect and must cease”), correctly criticizes the Examiner’s reliance on the forgoing per se rule (Br. 15).

However, Appellant has not mentioned, let alone addressed, the motivation given by the Examiner as support for his conclusion that it would have been obvious to modify Ohgami to use plural bosses and associated lifter features, namely, a desire to prevent tilting of the component while the component is being mounted. Instead, Appellant states that “the Examiner does not assert that the Ohgami reference contains any motivation or suggestion to modify the device disclosed therein to reach the claimed subject matter” (Br. 15). This argument overlooks the fact that obviousness can be based on common knowledge and

common sense without the need for a specific teaching in a reference. *See KSR*, 127 S. Ct. at 1742-43, 82 USPQ2d at 1397 (“Rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.”); *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367, 80 USPQ2d 1641, 1650 (Fed. Cir. 2006) (“Our suggestion test is in actuality quite flexible and not only permits, but requires, consideration of common knowledge and common sense”); *Alza Corp. v. Mylan Labs., Inc.*, 464 F.3d 1286, 1291, 80 USPQ2d 1001, 1004 (Fed. Cir. 2006) (“There is flexibility in our obviousness jurisprudence because a motivation may be found implicitly in the prior art. We do not have a rigid test that requires an actual teaching to combine ...”).

In our view, the Examiner’s conclusion that it would have been obvious to modify Ohgami so as to employ plural (e.g., two) bosses (i.e., battery pillars) and associated lifting features (i.e., cam surface 65 and extension surface 66, including cavity 67) to prevent tilting of the battery during insertion reflects the common knowledge and common sense of the artisan. It is an elementary principle of physics that two spaced-apart support points provide greater stability than does a single support point. The artisan therefore would have recognized that the stability of Ohgami’s mechanism can be improved by providing the battery with two spaced-apart battery pillars and the lifter with corresponding cam surfaces 65 and extension surfaces 66, including cavities 67. The Examiner was therefore correct to hold that the subject matter of claim 1 would have been *prima facie* obvious over Ohgami.

Appellant argues that even assuming a prima facie case for obviousness has been made, it has been rebutted because the claimed invention achieves new and unexpected results (Br. 16; Reply Br. 4). *Cf. Leapfrog*, 485 F.3d at 1161, 82 USPQ2d at 1691 (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”) (quoting *KSR*, 127 S. Ct. at 1740-41, 82 USPQ2d at 1395). However, the first result asserted to have been unexpected, i.e., increased stability (Br. 16), not only would have been expected, it would have provided the motivation for modifying Ohgami to employ more than one boss. As for the other asserted unexpected results, i.e., decreasing the amount of lifting force and improving the sliding motion of the lifter (*id.*), Appellant has not explained why these alleged advantages, assuming they in fact occur, would have been unexpected.

For the foregoing reasons, we are affirming the § 103(a) rejection of claim 1 for obviousness over Ohgami. The rejection is also being affirmed with respect to independent claims 20 and 29, as to which Appellant repeats the arguments made with respect to claim 1.

Appellant separately argues the merits of dependent claims 2, 4, 39, and 41. Claim 2, which depends on claim 1, specifies that the retention structure of the bosses and the mating retention structure of the lifter comprise “angled abutment surfaces.” This limitation is satisfied for the reasons given above in the discussion of claims 7 and 17. The rejection is therefore affirmed as to claim 2.

The rejection of claim 4, which depends on claim 2 and specifies that the angled abutment surfaces are substantially parallel to one another and substantially

perpendicular to the direction of movement between the retention structure and the mating retention structure, is reversed for reasons given in the discussion of claim 10.

The rejection of claims 39 and 41, which depend on independent claims 20 and 29, respectively, and specify that the retention structures “comprise angled retention structures,” is affirmed. This limitation is satisfied by Ohgami for the reasons given in the discussion of claim 7.

Inasmuch as Appellant does not separately argue the merits of the remaining dependent claims (namely, claims 3, 5, 6, 21, 29-35, 38, and 42), we are also affirming the § 103(a) rejection with respect to those claims. *Young*, 927 F.2d at 590, 18 USPQ2d at 1091; 37 C.F.R. § 41.37(c)(1)(vii)(2004).

Summarizing, the § 103(a) rejection is affirmed with respect to claims 1-3, 5, 6, 12, 13, 18-21, 28-35, 38, 39, 41, and 42 and reversed with respect to claim 4.

DECISION

The § 102(b) rejection is affirmed with respect to claims 7-9, 11, 14-17, 22-27, 36, 37, and 40 and reversed with respect to claim 10.

The § 103(a) rejection is affirmed with respect to claims 1-3, 5, 6, 12, 13, 18-21, 28-35, 38, 39, 41, and 42 and reversed with respect to claim 4.

Appeal No. 2007-0507
Application 10/737,051

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. 1.136(a). *See* 37 C.F.R. §§ 41.50(f) and 41.52(b).

AFFIRMED-IN-PART

pgc

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

Enclosure: *Webster's II New College Dictionary* 129, 796, 1094 (2001).